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**LONG-TERM IMMUNOLOGIC EFFECTS OF SARS-CoV-2 INFECTION: LEVERAGING TRANSLATIONAL RESEARCH METHODOLOGY TO ADDRESS EMERGING QUESTIONS.**

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**Public Summary:**

The current era of COVID-19 is characterized by emerging variants of concern (VOCs), waning vaccine- and natural infection-induced immunity, debate over the timing and necessity of vaccine boosting, and the emergence of post-acute sequelae of SARS-CoV-2 infection (PASC). As a result, there is an ongoing need for research to promote understanding of the immunology of both natural infection and prevention, especially as SARS-CoV-2 immunology is a rapidly changing field, with new questions arising as the pandemic continues to grow in complexity. The next phase of COVID-19 immunology research will need focus on clearer characterization of the immune processes defining acute illness, development of a better understanding of the immunologic processes driving protracted symptoms and prolonged recovery (i.e. PASC), and a growing focus on the impact of therapeutic and prophylactic interventions on the long-term consequences of SARS-CoV-2 infection. In this review, we address what is known about the long-term immune consequences of SARS-CoV-2 infection and propose how experience studying the translational immunology of other infections might inform the approach to some of the key questions that remain.

**Scientific Abstract:**

The current era of COVID-19 is characterized by emerging variants of concern (VOCs), waning vaccine- and natural infection-induced immunity, debate over the timing and necessity of vaccine boosting, and the emergence of post-acute sequelae of SARS-CoV-2 infection (PASC). As a result, there is an ongoing need for research to promote understanding of the immunology of both natural infection and prevention, especially as SARS-CoV-2 immunology is a rapidly changing field, with new questions arising as the pandemic continues to grow in complexity. The next phase of COVID-19 immunology research will need focus on clearer characterization of the immune processes defining acute illness, development of a better understanding of the immunologic processes driving protracted symptoms and prolonged recovery (i.e. PASC), and a growing focus on the impact of therapeutic and prophylactic interventions on the long-term consequences of SARS-CoV-2 infection. In this review, we address what is known about the long-term immune consequences of SARS-CoV-2 infection and propose how experience studying the translational immunology of other infections might inform the approach to some of the key questions that remain.

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